“Jootsing”: The Key to Creativity

READING TIME: 5 MINUTES

Creativity can seem like a mysterious process. But many of the most creative people understand that you can actually break it down into a simple formula, involving what researcher Douglas Hofstadter calls “jootsing.” Here’s how understanding systems can help us think more creatively.

> “Art is limitation; the essence of every picture is the frame. If you draw a giraffe, you must draw him with a long neck. If in your bold creative way you hold yourself free to draw a giraffe with a short neck, you will really find that you are not free to draw a giraffe.” —G.K. Chesterton

We can break the creative process down into the following three steps:

1. Gain a deep understanding of a particular system and its rules.
2. Step outside of that system and look for something surprising that subverts its rules.
3. Use what you find as the basis for making something new and creative.

It may not be simple to do, but it is reliable and repeatable.

In *Intuition Pumps and Other Tools for Thinking*, philosopher Daniel C. Dennett describes this process of understanding a system in order to step outside of it as “jootsing,” using a term coined by Douglas Hofstadter. “Jootsing” means “jumping out of the system.”

Dennett explains that jootsing is the method behind creativity in science, philosophy, and the arts: “*Creativity, that ardently sought but only rarely found virtue, often is a heretofore unimagined violation of the rules of the system from which it springs.*” The rules within a system could be things like the idea that a painting must have a frame, a haiku must

international contests. And landscape paintings don't need to contain a sky, let alone a blue one.

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Creativity, as Dennett describes it, is not about pure novelty. The concept of jootsing shows us that constraints and restrictions are essential for creativity.

Breaking rules you don't know exist is not a statement. It's a common refrain that much of modern art could be the work of a five-year-old. Yet while a five-year-old could produce a random combination of elements that looks similar to a famous work of modern art, it would not be creative in the same way because the child would not be jootsing. They wouldn't have an understanding of the system they now sought to subvert.

Limitations are essential because they give us a starting point and a shape to work against.

While amateurs may attempt to start from scratch when trying to make something creative in a new area, professionals know they must first get in touch with the existing territory. Before even contemplating their own work, they take the time to master the conventional ways of doing things, to know what the standards are, and to become well-versed in the types of work considered exemplary. Doing so can take years or even the best part of a career. Dennett summarizes: "*It helps to know the tradition if you want to subvert it. That's why so few dabblers or novices succeed in coming up with anything truly creative.*"

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Understanding a system first is necessary for creativity for two reasons. First, it provides something comprehensible to use as a starting point, and second, it makes it possible to come up with something more interesting or useful. **If you try to start a creative e from nothing, you'll end up with mere chaos.**

can find something to lean on, some style or genre or pattern to lay down and exploit a bit, or allude to, before you twist it, you will come up with nothing but noise."

Creativity often begins with accidents that end up showing a new possibility or reveal that violating a particular rule isn't as harmful as expected. Elsewhere in the book, Dennett suggests that any computer model intended to generate creativity must include mistakes and randomness, "*junk lying around that your creative process can bump into, noises that your creative process can't help overhearing.*"

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Most of us say we want to be creative—and we want the people we work with and for to be creative. The concept of jootsing reveals why we often end up preventing that from happening. **Creativity is impossible without in some way going against rules that exist for a good reason.**

Psychologists Jacob Getzels and Phillip Jackson studied creativity in the 1950s. Their findings were repeated across many studies and described what was termed as the Getzels-Jackson effect: "*The vast majority—98 percent—of teachers say creating is so important that it should be taught daily, but when tested, they nearly always favor less creative children over more creative children.*"

Kevin Ashton, in *How to Fly a Horse*, explains why. Teachers favor less creative children "*because people who are more creative also tend to be more playful, unconventional, and unpredictable, and all of this makes them harder to control. No matter how much we say we value creation, deep down, most of us value control more. And so we fear change and favor familiarity. Rejecting is a reflex.*" Ashton notes that the Getzels-Jackson effect is also present in the organizations we are a part of in adulthood. When the same tests are applied to decision-makers and authority figures in business, science, and government, the results are the same: they all say they value creation, but it turns out they don't value creators.

If you want people to be creative, you can't complain or punish them when they question a system that is "*typically so entrenched that it is as invisible as the air you breathe,*" as Dennett says. You need to permit a lot of exploration, including ideas that don't work out. Not everything outside of a system proves worth pursuing. And often the rules that are most beneficial to break are those that seem the most load-bearing, as if meddling with them will cause the whole system to collapse. It might—or it might make it much better.

You also need to permit the making of mistakes if you want to foster creativity, because that often ends up leading to new discoveries. Dennett writes, "*The exploitation of accidents is the key to creativity, whether what is being made is a new genome, a new behavior, or a new melody.*" Most accidents never end up being profitable or valuable in a measurable way. But they're necessary because they're part of the process of developing something new. Accidents fuel creativity.

In the book *Loonshots*, Safi Bahcall explores, among other ideas, how to nurture and develop those seemingly crazy ideas that turn out to be paradigm-shifting innovations. He gives many examples of now ubiquitous technologies that were initially laughed at, rejected, or buried. He notes that it's not easy to immediately buy in to radical developments, and if we want to have environments where creating is possible, then we have to give creativity space and understanding. "*It's worth keeping in mind,*" he says, "*that revving the creative engine to fire at higher speeds . . . means more ideas and more experiments, which also means, inevitably, more failed experiments.*"

As individuals, if we want to be creative, we need to give ourselves space to play and experiment without a set agenda. Amos Tversky famously said that the secret to doing good work is being a little unemployed so you always have hours in the day to waste as you wish. During that wasted time, you'll likely have your best, most creative ideas.

If your schedule is crammed with only room for what's productive in an obvious way, you'll have a hard time seeing outside of the existing system.